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FILE COVERS 1907 - 30 Nov 2004 VOL 141 ISS 23

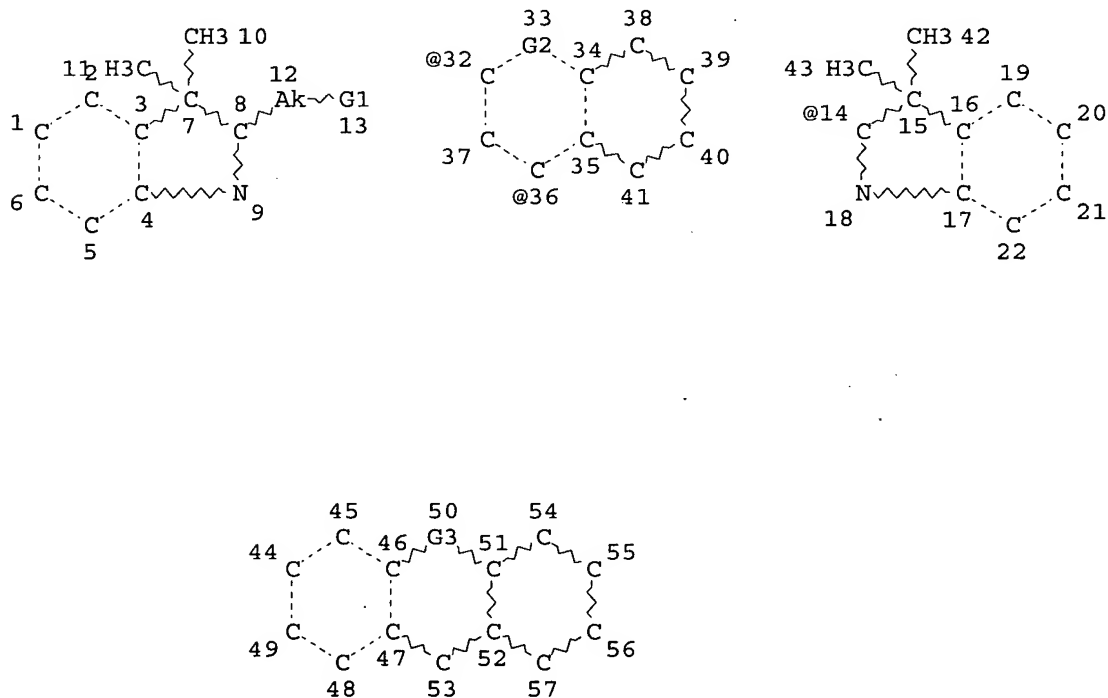
FILE LAST UPDATED: 29 Nov 2004 (20041129/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d que 124

L22 STR



VAR G1=14/32/36

VAR G2=O/N

VAR G3=O/C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

Searched by P. Ruppel

ECOUNT IS M1-X7 C AT 12

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 48

STEREO ATTRIBUTES: NONE

L23 (10)SEA FILE=REGISTRY SSS FUL L22
L24 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L23

=> d ibib abs hitstr l24 1-7

L24 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:292145 HCAPLUS

DOCUMENT NUMBER: 140:300070

TITLE: Fluorescent labeling reagents with multiple donors and acceptors

INVENTOR(S): Kumar, Shiv; Chen, Chung-yuan

PATENT ASSIGNEE(S): Amersham Biosciences Corp, USA

SOURCE: PCT Int. Appl., 46 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|--|----------|-----------------|----------|
| WO 2004029579 | A2 | 20040408 | WO 2003-US30361 | 20030925 |
| WO 2004029579 | A3 | 20040819 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

PRIORITY APPLN. INFO.: US 2002-413517P P 20020925

AB Disclosed is a novel class of fluorescent resonance energy transfer (FRET) labeling reagents, based on and synthesized from easily prepared dye building blocks. The labeling reagents are in the form of 'cassettes' which enable their attachment to a wide variety of biol. and other materials. A labeling reagent comprises at least two fluorescent dye moieties covalently linked via a linker group and optionally having a target bonding group for attaching the reagent to a target. The energy transfer labeling reagents may be bound to target materials through covalent or non-covalent attachment. The dyes are selected so that the emission spectrum of a first (or donor) dye overlaps the absorption spectrum of a second dye, thereby allowing energy transfer to occur between the dyes. The dye building blocks are 4', 5'-bis-aminomethyl-fluorescein and/or its 5(6)-carboxylic acid and having the structure (I). In addition to the embodiment of the invention which includes a single donor and a single acceptor fluorochrome, the fluorescent energy transfer labeling reagents according to the invention may further comprise one or more third fluorochromes each having third absorption and emission spectra

covalently attached to said first or second fluorochromes.

IT 676625-59-5P 676625-60-8P

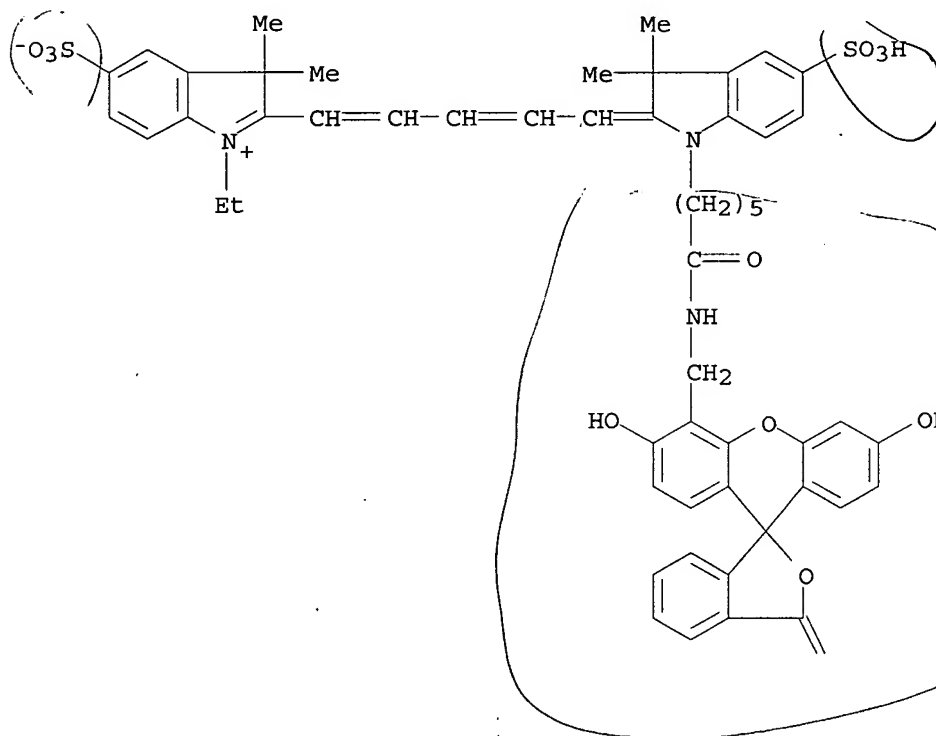
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)

(fluorescent labeling reagents with multiple donors and acceptors)

RN 676625-59-5 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[[[3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-4'-yl)methyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

PAGE 1-A



FETL

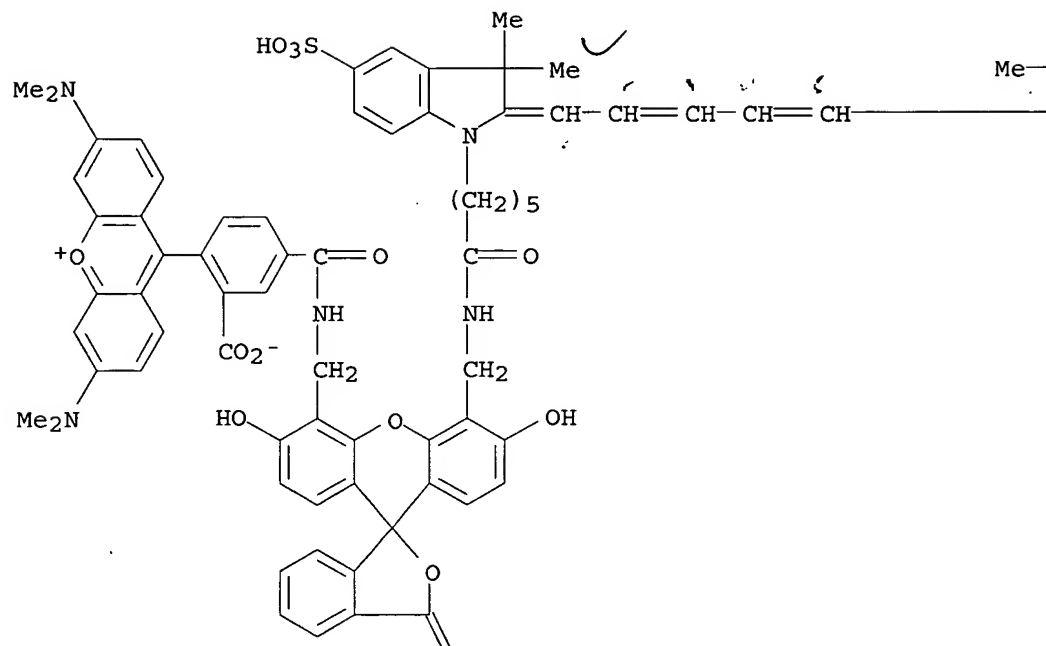
PAGE 2-A



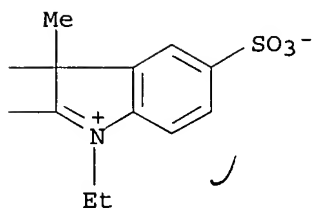
RN 676625-60-8 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[[[5'-[[[4-[3,6-bis(dimethylamino)xanthylium-9-yl]-3-carboxybenzoyl]amino]methyl]-3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-4'-yl)methyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, bis(inner salt) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



PAGE 2-A



IT 676625-66-4P

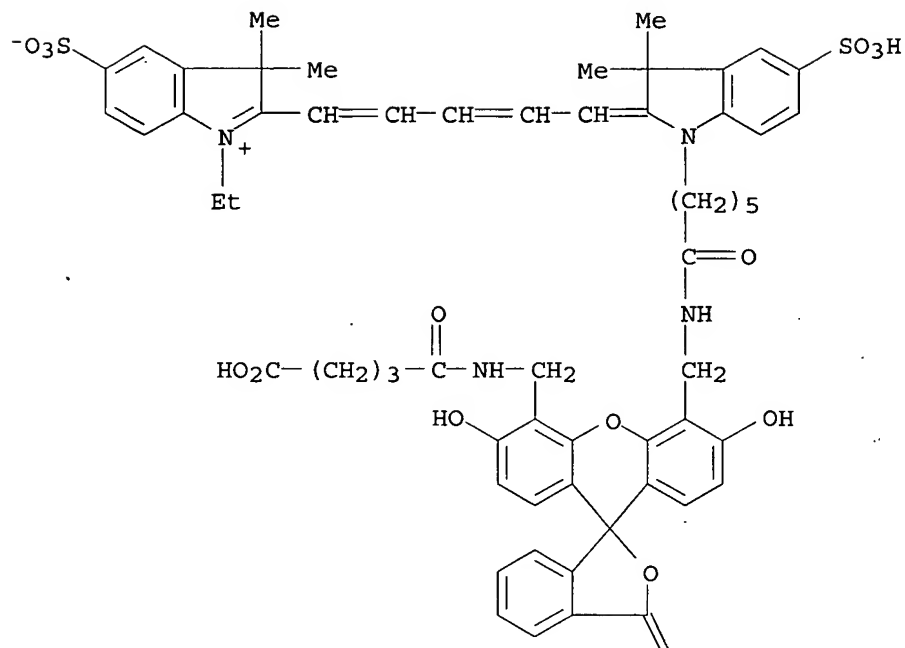
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(fluorescent labeling reagents with multiple donors and acceptors)

RN 676625-66-4 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[[[5'-[[[4-carboxy-1-oxobutyl)amino]methyl]-3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-4'-yl]methyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, inner salt (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L24 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2004:292144 HCAPLUS
 DOCUMENT NUMBER: 140:317655
 TITLE: Energy transfer dyes, terminators, and use thereof
 INVENTOR(S): Kumar, Shiv; Chen, Chung-yuan; Rao, Sudhakar
 PATENT ASSIGNEE(S): Amersham Biosciences Corp, USA
 SOURCE: PCT Int. Appl., 51 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|----------|
| WO 2004029578 | A2 | 20040408 | WO 2003-US30360 | 20030925 |
| WO 2004029578 | A3 | 20040708 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,
 GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
 LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ,
 OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
 TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ,
 BY, KG, KZ, MD

Searched by P. Ruppel

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

US 2002-413517P

P 20020925

OTHER SOURCE(S):

MARPAT 140:317655

AB The present invention relates to a set of four fluorescently labeled dye terminators with improved brightness. Two of them are single-dye-labeled terminators, and the other two dye terminators are based on fluorescent resonance energy transfer (FRET). The FRET dye terminators are generated from the 4',5'-bis-aminomethylfluorescein. Of the two amino groups of the donor dye, 4',5'-bis-aminomethylfluorescein, one amino group is used to attach the acceptor dye, and the other amino group is used to attach the dideoxynucleoside-5'-triphosphate. These terminators are useful as labels in DNA sequencing reactions. A typical single-dye-labeled terminator was manufactured by adding 35 mg 5-carboxyfluorescein-NHS to 5 mL solution 11ddGTP (0.1 M NaHCO/Na₂CO₃, pH 8.5) in ice/water bath, and stirring the mixture 16 h a room temperature

IT 676625-59-5P

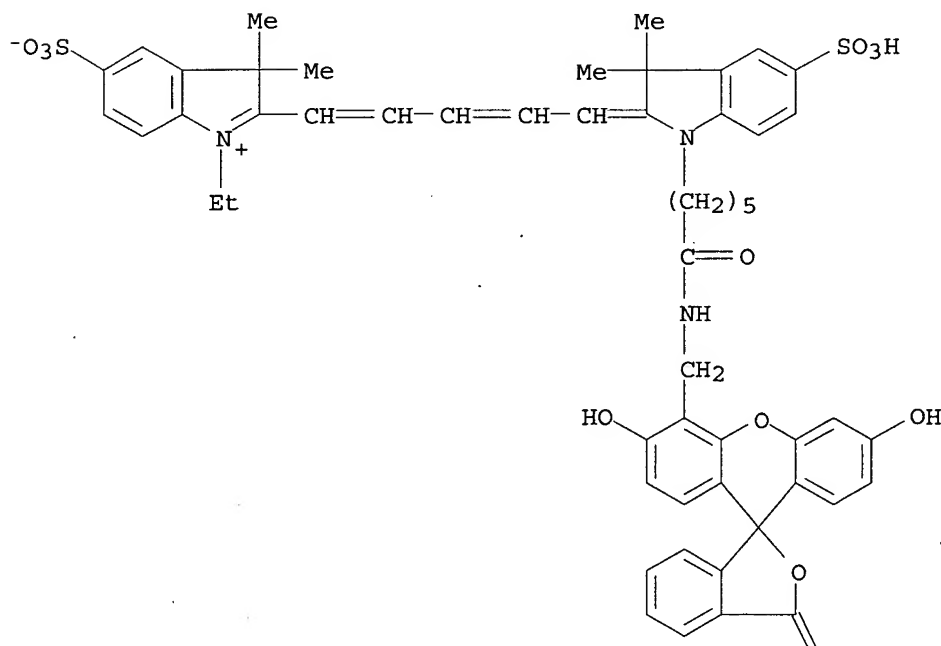
RL: IMF (Industrial manufacture); PREP (Preparation)

(dye label; fluorescently labeled dye terminators with improved brightness for DNA sequencing reactions)

RN 676625-59-5 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-4'-yl)methyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

L24 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:43460 HCAPLUS

DOCUMENT NUMBER: 132:109363

TITLE: Colorants having rotaxane structure, labeling agents and method for their use

INVENTOR(S): Suzuki, Tomomi; Noda, Hitoshi; Okazaki, Shigetoshi

PATENT ASSIGNEE(S): Bunshi Bio Photonics Kenkyusho K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| JP 2000017183 | A2 | 20000118 | JP 1999-116397 | 19990423 |
| JP 3078793 | B2 | 20000821 | | |
| US 6242430 | B1 | 20010605 | US 1999-301635 | 19990429 |
| PRIORITY APPLN. INFO.: OTHER SOURCE(S): | | | JP 1998-121255 | A 19980430 |

MARPAT 132:109363

AB The colorants with good water solubility, useful for biomol. labeling, consist of a cyclodextrin ring threaded by a linear mol. chain which can bear colorants of the same or different type on 2 ends, e.g., fluorescent pigments. Thus, mixing 100 μ L a saturated solution of α -cyclodextrin in DMSO with 3 mg 1,12-diaminododecane and 25 mg 5-carboxytetramethylrhodamine succinimidyl ester dissolved in 50 μ L DMF at 40° for overnight gave a rotaxane compound

IT 255382-25-3P 255382-28-6P

RL: ARG (Analytical reagent use); IMF (Industrial manufacture); ANST (Analytical study); PREP (Preparation); USES (Uses)
(colorants having rotaxane structure, labeling agents and method for use)

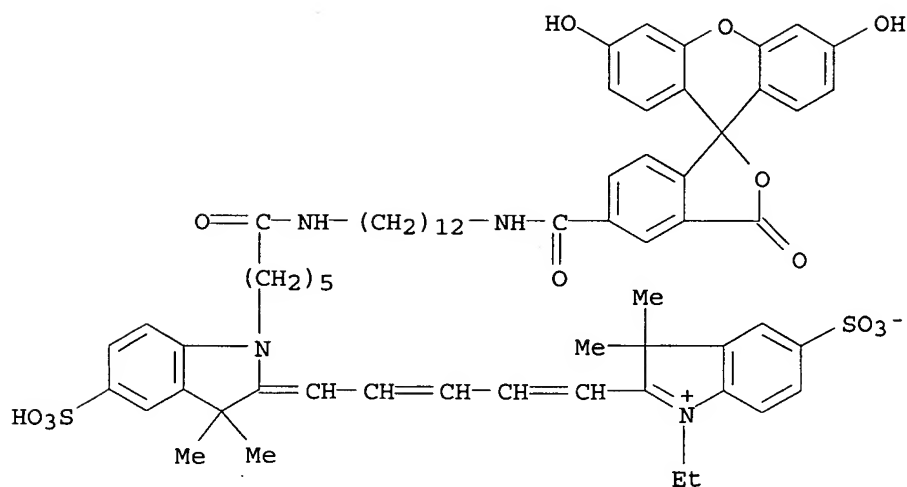
RN 255382-25-3 HCAPLUS

CN α -Cyclodextrin, rotaxane compd. with 2-[5-[1-[6-[[12-[[3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)carbonyl]amino]dodecyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-3H-indolium inner salt (1:1) (9CI) (CA INDEX NAME)

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CRN 255382-24-2

CMF C66 H76 N4 O13 S2

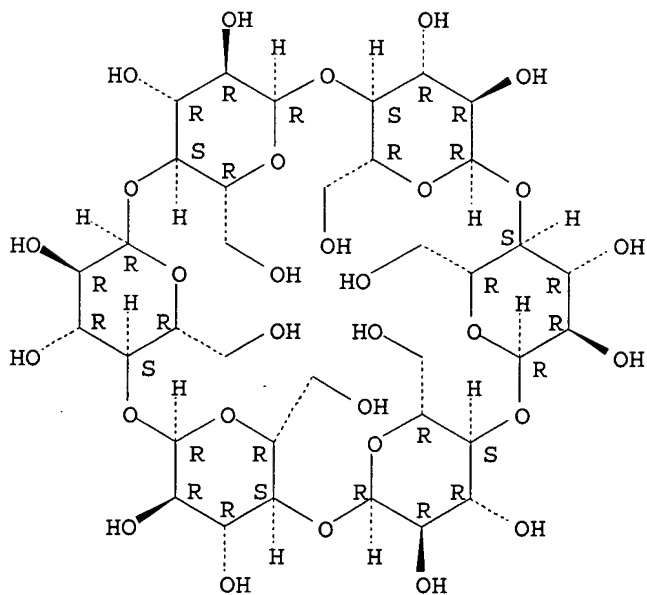


CM 2

CRN 10016-20-3

CMF C36 H60 O30

Absolute stereochemistry.



RN 255382-28-6 HCAPLUS

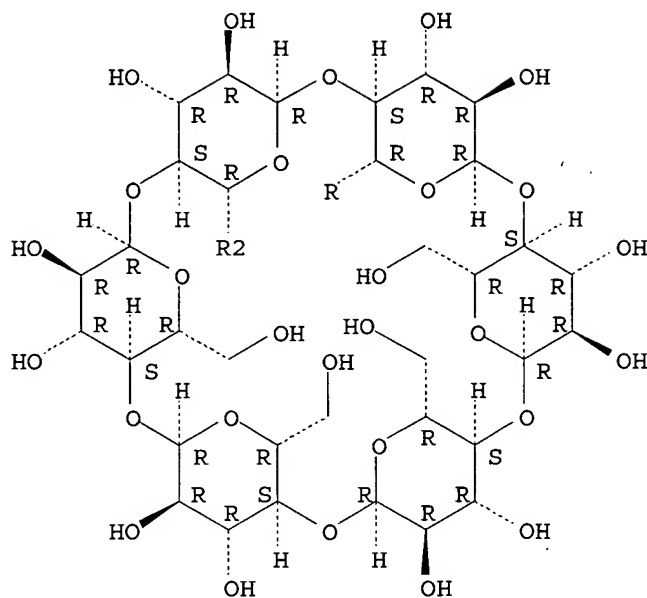
CN α -Cyclodextrin, 6A-[(4-carboxy-1-oxobutyl)amino]-6A-deoxy-, rotaxane compd. with 2-[5-[1-[6-[[12-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9']-[9H]xanthen]-5-yl)carbonyl]amino]dodecyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-3H-indolium inner salt (1:1) (9CI) (CA INDEX NAME)

CM 1

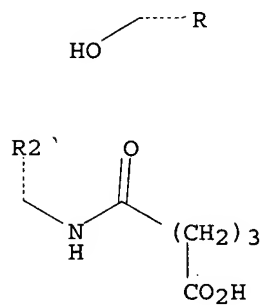
CRN 255382-27-5
CMF C41 H67 N O32

Absolute stereochemistry.

PAGE 1-A

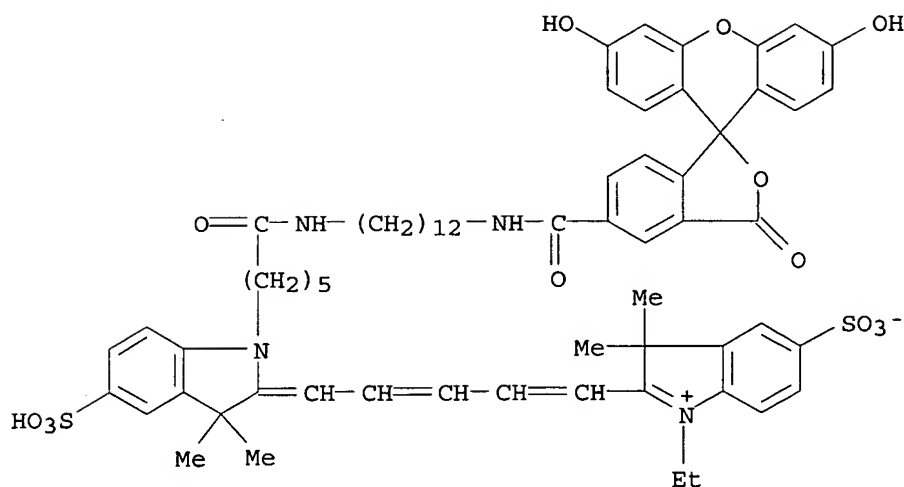


PAGE 2-A



CM 2

CRN 255382-24-2
CMF C66 H76 N4 O13 S2



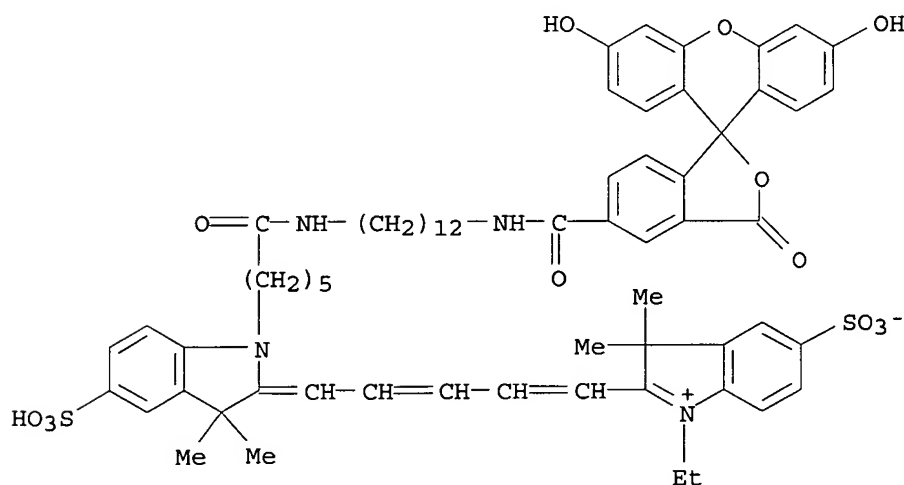
IT 255382-24-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; colorants having rotaxane structure, labeling agents and method for use)

RN 255382-24-2 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[[12-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)carbonyl]amino]dodecyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)



L24 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:561610 HCAPLUS

DOCUMENT NUMBER: 131:166214

TITLE: Energy transfer dyes with enhanced fluorescence, reagents containing them, and their use in nucleic acid sequencing

INVENTOR(S): Lee, Linda G.; Spurgeon, Sandra L.; Rosenblum, Barnett

PATENT ASSIGNEE(S): Perkin-Elmer Corporation, USA

Searched by P. Ruppel

SOURCE: U.S., 77 pp., Cont.-in-part of U.S. 5,863,727.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| US 5945526 | A | 19990831 | US 1998-46203 | 19980323 |
| US 5863727 | A | 19990126 | US 1996-642330 | 19960503 |
| US 5847162 | A | 19981208 | US 1996-672196 | 19960627 |
| JP 2003221515 | A2 | 20030808 | JP 2002-280013 | 19970521 |
| US 6335440 | B1 | 20020101 | US 1999-272097 | 19990318 |
| US 2002086985 | A1 | 20020704 | US 2001-14743 | 20011029 |
| JP 2004305217 | A2 | 20041104 | JP 2004-152623 | 20040521 |
| PRIORITY APPLN. INFO.: | | | US 1996-642330 | A2 19960503 |
| | | | US 1996-672196 | A2 19960627 |
| | | | US 1996-726462 | A1 19961004 |
| | | | JP 1998-502974 | A3 19970521 |
| | | | JP 2002-280013 | A3 19970521 |
| | | | US 1998-46203 | A1 19980323 |
| | | | US 1999-272097 | A1 19990318 |

OTHER SOURCE(S): MARPAT 131:166214

AB Novel linkers for linking a donor dye to an acceptor dye in an energy transfer fluorescent dye are provided. These linkers facilitate the efficient transfer of energy between a donor and acceptor dye in an energy transfer dye. One of these linkers for linking a donor dye to an acceptor dye in an energy transfer fluorescent dye has the general structure R21ZCOR2R3 (R1=C1-5 alkyl attached to the donor dye; Z=NH, S, O; R2=alkene, diene, alkyne, 5-6-membered ring having at least one unsatd. bond or a fused ring structure which is attached to the carbonyl carbon; R3=functional group which attaches the linker to the acceptor dye). A preferred linker is CH2NHCOC6H4CH2NHCO. Thus, 9-(2,4-dicarboxyphenyl)-3,6-bis(dimethylamino)xanthylium was esterified (4-CO2H) with N-hydroxysuccinimide (I), condensed with 4-H2NCH2C6H4CO2H, re-esterified with I, and condensed with 4'-(aminomethyl)-5-carboxyfluorescein to give an energy transfer dye (II), esterification of which with I provided a site for coupling to a nucleoside. In DNA sequencing, an oligonucleotide labeled with II was brighter than one labeled with the direct amide of the resp. carboxyrhodamine and (aminomethyl)fluorescein not containing a spacer bridge.

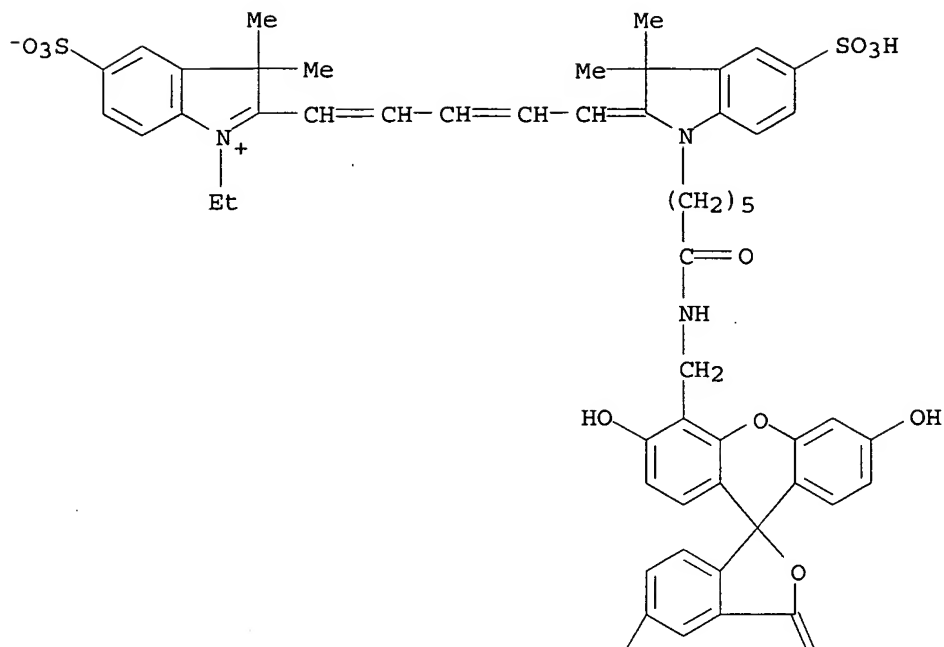
IT 212389-91-8P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (energy transfer dyes with enhanced fluorescence, reagents containing them, and their use in nucleic acid sequencing)

RN 212389-91-8 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[[[5-carboxy-3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-4'-yl)methyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:708965 HCAPLUS

DOCUMENT NUMBER: 129:335785

TITLE: Acid-labile and enzymically cleavable dye conjugates for diagnosis with near-IR radiation and for therapy

INVENTOR(S): Licha, Kai; Riefke, Bjoern; Semmler, Wolfhard; Wrasidlo, Wolfgang

PATENT ASSIGNEE(S): Institut fuer Diagnostikforschung G.m.b.H. an der Freien Universitaet Berlin, Germany

SOURCE: PCT Int. Appl., 40 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| WO 9847538 | A2 | 19981029 | WO 1998-DE1001 | 19980402 |
| WO 9847538 | A3 | 19990121 | | |

Searched by P. Ruppel

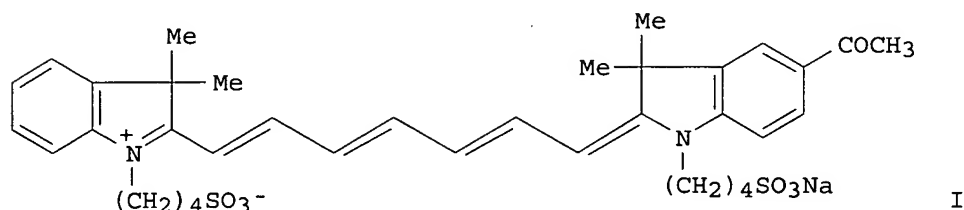
W: AU, CA, CN, HU, JP, KR, NO, US

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

| | | | | |
|---|----|----------|------------------|----------|
| DE 19717904 | A1 | 19981029 | DE 1997-19717904 | 19970423 |
| AU 9879057 | A1 | 19981113 | AU 1998-79057 | 19980402 |
| AU 733757 | B2 | 20010524 | | |
| EP 988060 | A2 | 20000329 | EP 1998-929212 | 19980402 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |
| JP 2001521530 | T2 | 20011106 | JP 1998-544715 | 19980402 |
| NO 9905181 | A | 19991022 | NO 1999-5181 | 19991022 |
| US 6534041 | B1 | 20030318 | US 2000-403418 | 20000501 |

PRIORITY APPLN. INFO.:

| | | |
|------------------|---|----------|
| DE 1997-19717904 | A | 19970423 |
| WO 1998-DE1001 | W | 19980402 |

OTHER SOURCE(S): MARPAT 129:335785
GI

AB Dyes which fluoresce in the near-IR spectral region are provided, the fluorescence of which is quenched by coupling via a cleavable linker to aromatic compds. (e.g. dyes, drugs), antibodies, antibody fragments, or other proteins. Cleavage of such a construct in vivo at a target site (e.g. a tumor or focus of inflammation) leads to an increase in near-IR fluorescence, which can be detected even at deep sites owing to the high transparency of tissues to near-IR radiation. Suitable dyes include tetrapyrrole, tetraazapyrrole, xanthine, phenoxazine, phenothiazine, and especially polymethine dyes such as cyanine dyes. Drug-dye conjugates in which the therapeutic activity of the drug is masked by coupling to the dye may serve as prodrugs which, after administration, are cleaved at a target site to release the active agent, as well as the fluorescent dye which may act as photosensitizer, at the site. The linker may be acid labile, i.e. cleavable at the low pH characteristic of tumors and sites of bacterial inflammation, or cleavable by enzymes which occur in diseased tissues, e.g. bacterial enzymes. Thus, a cyanine dye, 5-(1-oxoethyl)-1,1'-(4-sulfobutyl)indotricarbocyanine Na salt (I) was prepared by reaction of 4-hydrazinophenyl Me ketone with 3-methyl-2-butanone followed by 1,4-butanedisulfone to form 5-(1-oxoethyl)-1-(4-sulfobutyl)-2,3,3-trimethyl-3H-indolenine and further reaction of this compound with glutaraldehyde dianil-HCl. Reaction of I with 4-carboxyphenylsulfonylhydrazine followed by N-hydroxysuccinimide and DCCD produced an acid-labile N-hydroxysuccinimidyl ester, which was coupled to anti-melanoma monoclonal antibody 9.2.27; the antibody conjugate had a fluorescence quantum yield of 0.1%.

IT 215114-76-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

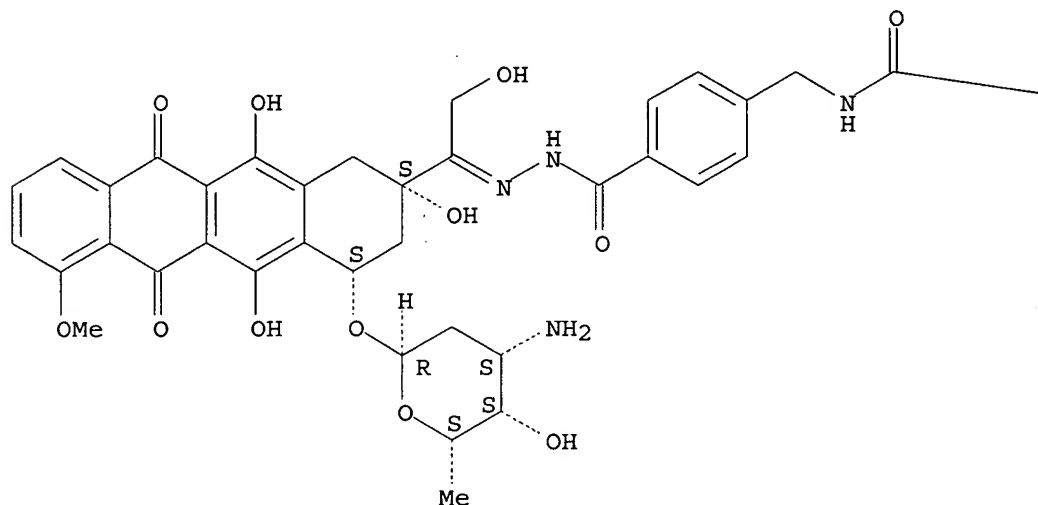
(acid-labile and enzymically cleavable dye conjugates for diagnosis with near-IR radiation and for therapy)

RN 215114-76-4 HCAPLUS

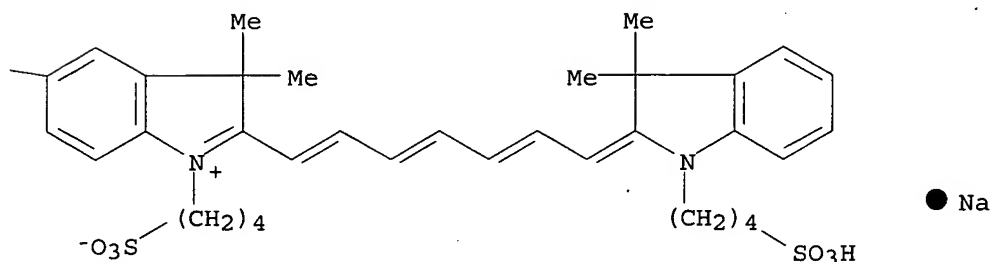
CN 3H-Indolium, 5-[[[4-[[[1-[(2S,4S)-4-[(3-amino-2,3,6-trideoxy- α -L-lyxo-hexopyranosyl)oxy]-1,2,3,4,6,11-hexahydro-2,5,12-trihydroxy-7-methoxy-2-naphthacenyl]-2-hydroxyethylidene]hydrazino]carbonyl]phenyl]methyl]amino]carbonyl]-2-[7-[1,3-dihydro-3,3-dimethyl-1-(4-sulfobutyl)-2H-indol-2-ylidene]-1,3,5-heptatrienyl]-3,3-dimethyl-1-(4-sulfobutyl)-, inner salt, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A



PAGE 1-B



L24 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1998:599359 HCAPLUS
 DOCUMENT NUMBER: 129:212480
 TITLE: Energy transfer dyes with enhanced fluorescence
 INVENTOR(S): Lee, Linda G.; Spurgeon, Sandra L.; Rosenblum, Barnett
 PATENT ASSIGNEE(S): The Perkin Elmer Corp., USA
 SOURCE: U.S., 83 pp., Cont.-in-part of U. S. Ser. No. 642,330.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6

Searched by P. Ruppel

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|-------------|
| US 5800996 | A | 19980901 | US 1996-726462 | 19961004 |
| US 5863727 | A | 19990126 | US 1996-642330 | 19960503 |
| US 5847162 | A | 19981208 | US 1996-672196 | 19960627 |
| CA 2203494 | AA | 19971103 | CA 1997-2203494 | 19970423 |
| CA 2203494 | C | 20001226 | | |
| EP 805190 | A2 | 19971105 | EP 1997-303039 | 19970502 |
| EP 805190 | A3 | 19980107 | | |
| EP 805190 | B1 | 19991215 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| AU 9719995 | A1 | 19971120 | AU 1997-19995 | 19970502 |
| AU 691143 | B2 | 19980507 | | |
| EP 940450 | A1 | 19990908 | EP 1999-201120 | 19970502 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| AT 187752 | E | 20000115 | AT 1997-303039 | 19970502 |
| JP 10088124 | A2 | 19980407 | JP 1997-115920 | 19970506 |
| JP 3090626 | B2 | 20000925 | | |
| JP 2000154381 | A2 | 20000606 | JP 2000-10931 | 19970506 |
| JP 2000187036 | A2 | 20000704 | JP 2000-10932 | 19970506 |
| JP 2003274999 | A2 | 20030930 | JP 2003-28821 | 19970506 |
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| US 6335440 | B1 | 20020101 | US 1999-272097 | 19990318 |
| JP 2000154332 | A2 | 20000606 | JP 2000-10933 | 20000119 |
| JP 3592173 | B2 | 20041124 | | |
| US 2002086985 | A1 | 20020704 | US 2001-14743 | 20011029 |
| JP 2004043819 | A2 | 20040212 | JP 2003-288285 | 20030806 |
| JP 2004068023 | A2 | 20040304 | JP 2003-288286 | 20030806 |
| JP 2004250713 | A2 | 20040909 | JP 2004-136932 | 20040430 |
| JP 2004305217 | A2 | 20041104 | JP 2004-152623 | 20040521 |
| PRIORITY APPLN. INFO.: | | | | |
| | | | US 1996-642330 | A2 19960503 |
| | | | US 1996-672196 | A2 19960627 |
| | | | US 1996-726462 | A 19961004 |
| | | | EP 1997-303039 | A3 19970502 |
| | | | JP 1997-115920 | A3 19970506 |
| | | | JP 2000-10931 | A3 19970506 |
| | | | JP 2000-10932 | A3 19970506 |
| | | | JP 2003-288285 | A3 19970506 |
| | | | JP 1998-502974 | A3 19970521 |
| | | | JP 2002-280013 | A3 19970521 |
| | | | US 1998-46203 | A1 19980323 |
| | | | US 1999-272097 | A1 19990318 |

OTHER SOURCE(S): MARPAT 129:212480
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Novel linkers for linking a donor dye to an acceptor dye in an energy transfer fluorescent dye are provided. These linkers facilitate the efficient transfer of energy between a donor and acceptor dye in an energy transfer dye. One of these linkers for linking a donor dye to an acceptor dye in an energy transfer fluorescent dye has the general structure

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R21Z1C(O)R22R28 where R21 is a C1-5 alkyl attached to the donor dye, C(O) is a carbonyl group, Z1 is either NH, S or O, R22 is a substituent which includes an alkene, diene, alkyne, a five and six membered ring having at least one unsatd. bond or a fused ring structure which is attached to the carbonyl carbon, and R28 includes a functional group which attaches the linker to the acceptor dye. One example dye prepared was I.

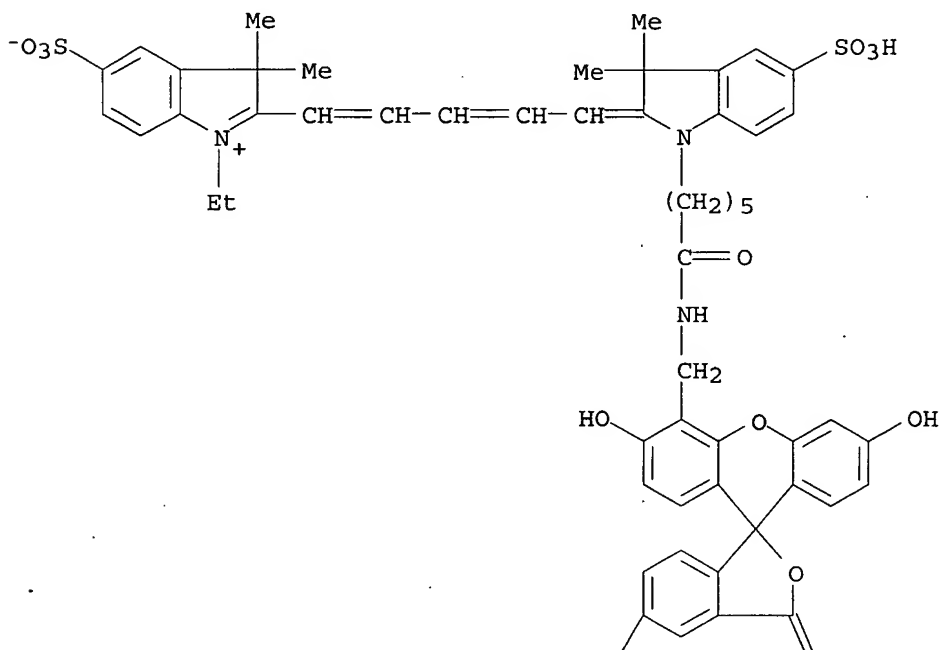
IT 212389-91-8P

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(energy transfer dyes with enhanced fluorescence)

RN 212389-91-8 HCAPLUS

CN 3H-Indolium, 2-[5-[1-[6-[[5-carboxy-3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-4'-yl)methyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-5-sulfo-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L24 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:85099 HCAPLUS
DOCUMENT NUMBER: 126:86792

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TITLE: Fluorescent labeling complexes with large stokes shifts formed by coupling together cyanine and other fluorochromes capable of resonance energy transfer

INVENTOR(S): Waggoner, Alan Stewart; Mujumdar, Swati Ratnakar; Mujumdar, Ratnakar Balvant

PATENT ASSIGNEE(S): Carnegie-Mellon University, USA

SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| EP 747700 | A2 | 19961211 | EP 1996-303879 | 19960530 |
| EP 747700 | A3 | 19970507 | | |
| EP 747700 | B1 | 20011205 | | |
| R: AT, BE, CH, DE, ES, FI, FR, GB, IT, LI, NL, SE | | | | |
| US 6008373 | A | 19991228 | US 1995-476880 | 19950607 |
| GB 2301833 | A1 | 19961218 | GB 1996-11453 | 19960530 |
| GB 2301833 | B2 | 19970716 | | |
| EP 943918 | A1 | 19990922 | EP 1999-110086 | 19960530 |
| R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, FI | | | | |
| AT 210292 | E | 20011215 | AT 1996-303879 | 19960530 |
| ES 2170204 | T3 | 20020801 | ES 1996-303879 | 19960530 |
| CA 2178308 | AA | 19961208 | CA 1996-2178308 | 19960605 |
| JP 09104825 | A2 | 19970422 | JP 1996-146333 | 19960607 |
| JP 2843296 | B2 | 19990106 | | |
| US 6130094 | A | 20001010 | US 1998-152009 | 19980911 |
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| US 6545164 | B1 | 20030408 | US 1999-413998 | 19991007 |
| US 2003220502 | A1 | 20031127 | US 2002-300459 | 20021120 |
| US 6673943 | B2 | 20040106 | | |

PRIORITY APPLN. INFO.:

| | | |
|----------------|----|----------|
| US 1995-476880 | A | 19950607 |
| EP 1996-303879 | A3 | 19960530 |
| US 1999-413998 | A3 | 19991007 |

AB The present invention provides low-mol.-weight fluorescent labeling complexes with large wavelength shifts between absorption of one dye in the complex and emission from another dye in the complex. These complexes can be used, for example, for multiparameter fluorescence cell anal. using a single excitation wavelength. The low mol. weight of the complex permits materials labeled with the complex to penetrate cell structures for use as probes. The labeling complexes are synthesized by covalently attaching through linkers to form donor-acceptor complexes. Resonance energy transfer from an excited donor to fluorescent acceptor provides wavelength shifts up to 300 nm. The fluorescent labeling complexes preferably contain reactive groups for the labeling of functional groups on target compds., such as derivatized oxy and deoxy polynucleic acids, antibodies, enzymes, lipids, carbohydrates, proteins, and other materials. The complexes may contain functional groups permitting covalent reaction with materials containing reactive groups.

IT 185397-56-2DP, reactions products 185397-56-2P

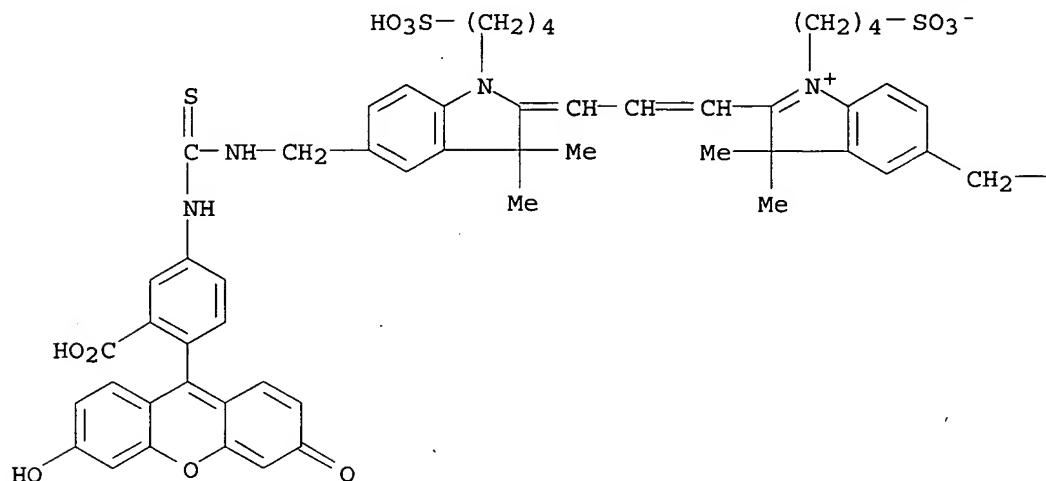
RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(fluorescent labeling complexes with large Stokes shifts preparation for cell anal.)

RN 185397-56-2 HCAPLUS

CN 3H-Indolium, 5-(aminomethyl)-2-[3-[5-[[[[[3-carboxy-4-(6-hydroxy-3-oxo-3H-xanthen-9-yl)phenyl]amino]thioxomethyl]amino]methyl]-1,3-dihydro-3,3-

dimethyl-1-(4-sulfobutyl)-2H-indol-2-ylidene]-1-propenyl]-3,3-dimethyl-1-(4-sulfobutyl)-, inner salt (9CI) (CA INDEX NAME)

PAGE 1-A



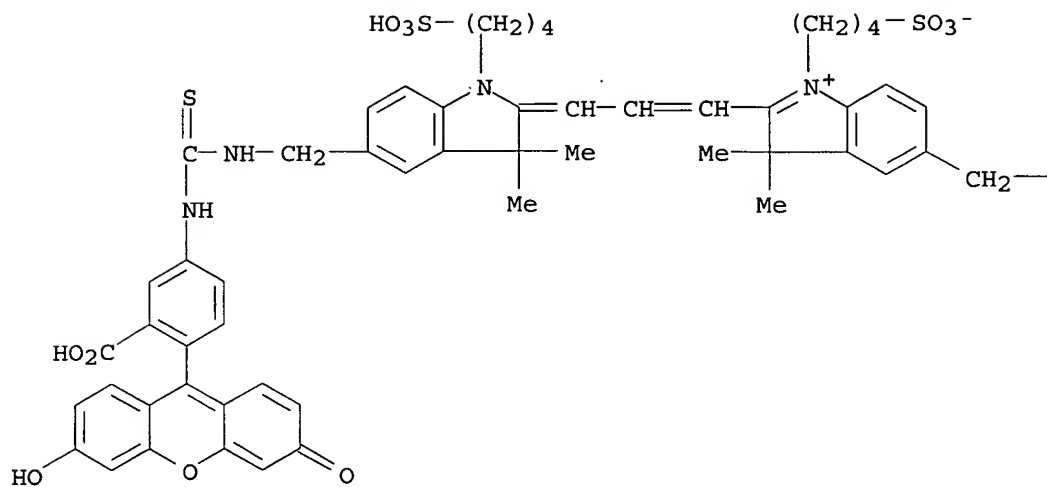
PAGE 1-B

—NH₂

RN 185397-56-2 HCAPLUS

CN 3H-Indolium, 5-(aminomethyl)-2-[3-[5-[[[[[3-carboxy-4-(6-hydroxy-3-oxo-3H-xanthen-9-yl)phenyl]amino]thioxomethyl]amino]methyl]-1,3-dihydro-3,3-dimethyl-1-(4-sulfobutyl)-2H-indol-2-ylidene]-1-propenyl]-3,3-dimethyl-1-(4-sulfobutyl)-, inner salt (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—NH₂

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